

REMARKS/ARGUMENTS

A. **General:**

1. Claims 6 and 10 have been amended to overcome the Examiner's rejection under 35 USC 112 as discussed below. Claims 6, 10, 12, and 24 have been rewritten in independent form including all of the limitations of the base claim and any intervening claims and, therefore, should now be in condition for allowance.

2. Claims 26 and 27 have been added. They are the same as claims 2 and 3, respectively, and are included to capture claims lost when claim 10 was rewritten in independent form and no longer depended from claim 7.

3. Claims 1-27 remain in the application.

B. **102 Rejection:**

The Examiner has rejected claims 1-3, 7, 11, 19, 20, 22, and 25 under 35 USC 102(b) as being anticipated by Okamura (Japan 64-35284).

Okamura discloses the use of a two-beam interferometer with internal phase control for its sensor. A major difficulty with this approach is that the reference arm of the interferometer must be actively stabilized to maintain the interferometer at its point of high sensitivity. This control is subject to variation in temperature, vibration and other large amplitude motions which reduce the stability, sensitivity and operational value of the Okamura device.

Applicant's magnetometer, on the other hand, is not an interferometer and, therefore, its sensitivity is greater and more easily maintained. Because Applicant neither describes nor claims an interferometric magnetometer, Applicant submits that Okamura cannot anticipate claims 1-3, 7, 11, 19, 20, 22, and 25, thus, obviating this rejection.

C. **103 Rejection:**

The Examiner has rejected claims 4, 5, 8, 9, 21, and 23 under 35 USC 103(a) as being unpatentable over Okamura.

Based on Applicant's discussion above in response to Examiner's 102(b) rejection, Applicant submits that Okamura cannot render obvious claims 4, 5, 8, 9, 21, and 23. Furthermore, Okamura, because it is an interferometric device, discloses the use of a compensator and phase controller to minimize "drift" and maximize measurement sensitivity. Thus, Applicant submits that Okamura would not have led one of ordinary skill in the art to use a tensioning means to, as stated by the Examiner, "obtain optimum operation of the magnetometer" - that is what the compensator and phase controller were for - and, therefore, Okamura cannot render obvious claims 4, 5, 8, 9, 21, and 23.

D. **112 Rejection:**

The Examiner has rejected claims 6 and 10, under 35 USC 112, second paragraph, because, as stated by the Examiner, it is not clear how the plurality of strings of claims 6 and 10 relate to the conducting string of claim 1 and it is unclear of what the resonant frequency is changed.

Applicant has rewritten claims 6 and 10 in independent form and believes in doing so that any lack of clarity with regard to the relationship of the strings has been removed. Applicant has also modified each claim to clarify that it is the resonant frequency of the magnetometer that is changed. Thus, Applicant submits that the Examiner's 112 rejection has been obviated and that the claims are now in condition for allowance.

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E. **Conclusion:**

In view of the above, Applicant submits that each of the presently pending claims in this application is in immediate condition for allowance. Reconsideration and withdrawal of the rejections are requested. Allowance of claims 1-27 at an early date is solicited.

Respectfully submitted,

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